

REMARKS/ARGUMENTS

Favorable consideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 7-18 are presently pending in this application, Claims 7-16 having been amended and Claims 17 and 18 having been newly added by the present amendment.

In the outstanding Office Action, Claims 7-12 were rejected under 35 U.S.C. §103(a) as being unpatentable over JP 2001-096117 (hereinafter “JP ‘117”) in view of Ogawa et al. (U.S. Patent 5,733,352); Claim 13 was rejected under 35 U.S.C. §103(a) as being unpatentable over JP ‘117 in view of Ogawa et al. and further in view of Higuchi et al. (U.S. Patent 4,364,760); Claim 14 was rejected under 35 U.S.C. §103(a) as being unpatentable over JP ‘117 in view of Ogawa et al. and further in view of Higuchi et al.; and Claims 15 and 16 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kuwamoto et al. (U.S. Patent 5,853,459) in view of JP ‘117 and Ogawa et al.

First, Applicants acknowledge with appreciation the courtesy of a personal interview granted to Applicants’ representative on February 11, 2008. During the interview, the outstanding issues were discussed and arguments in support of the claims’ patentability were presented as follows.

Claims 7-16 have been amended to clarify the subject matter recited therein, and Claims 17 and 18 have been added herein. These amendments and additions in the claims find support in the specification, claims and drawings as originally filed, and these claim amendments are not believed to narrow their previous scopes of the claims. No new matter is believed to be added thereby. If, however, the Examiner disagrees with any part of the amendments, the Examiner is invited to telephone the undersigned who will be happy to work in a joint effort to derive mutually satisfactory claim language.

Claim 7 is directed to a honeycomb filter for purifying exhaust gases and as currently amended recites “a columnar body comprising porous ceramic and having a plurality of through holes extending in parallel with one another in a length direction of said columnar body, said columnar body having a wall portion interposed between said through holes and configured to filter particulates in exhaust gases, wherein said plurality of through holes has a length l which is a longest side in a cross section perpendicular to said length direction of said columnar body, said columnar body has a length L in said length direction of said columnar body, said length L and said length l satisfy: $60 \leq L/l \leq 500$, and said wall portion has a surface roughness R_a as defined by JIS B 0601 which satisfies: $R_a \leq 100 \mu\text{m}$.”

The Office Action states that “[i]t would have been obvious ... to modify the Ohno et al. reference to include a surface roughness of R_a (according to JIS B 0601)) of the inner wall of said through hole satisfies: $R_a \leq 100 \mu\text{m}$ (Ogawa et al. column 4, lines 37-46) in order to include the collectable amount of combustible fine particles,” because “[t]he Ogawa et al. discloses a surface roughness of R_a (according to JIS B 0601)) of the inner wall of said through hole satisfies: $R_a \leq 100 \mu\text{m}$ (column 4, lines 37-46).” Applicants respectfully traverse as follows.

Ogawa et al. merely states that “[i]n the honeycomb structure of the present invention, the surface roughness of the cell wall is specified to be at least $30 \mu\text{m}$, preferably from 40 to $300 \mu\text{m}$ since the surface roughness of the cell wall is closely related to the collectable amount of combustible fine particles.”¹ Ogawa et al. goes on to state that “[t]here is *no particular limitation to the upper limit of the surface roughness* of the cell wall” (emphasis added in italic) and that “the upper limit is preferably $300 \mu\text{m}$, taking the strength into consideration.”² On the contrary, Claim 7 recites “said wall portion has a surface roughness

¹ Ogawa et al., column 4, lines 37-43.

² Id., lines 43-46.

Ra as defined by JIS B 0601 which satisfies: $Ra \leq 100 \mu\text{m}$.” That is, the surface roughness of the wall portion is $100 \mu\text{m}$ or less. By providing such a wall portion in combination with the dimension “said columnar body has a length L in said length direction of said columnar body, said length L and said length l satisfy: $60 \leq L/l \leq 500$,” a heated gas is introduced into the through holes and flows without undesired degree of turbulence, and particulates such as soot collected by the wall portion are more evenly burned to ashes and effectively peeled off from the wall portion by the flow of the heated gas during the regeneration process. To that end, Applicants respectfully direct the Examiner to Table 1 of Applicants’ specification (page 54 of Applicants’ specification). According to Table 1, it is evident that Examples 1-16 where $Ra \leq 100 \mu\text{m}$ show significantly less accumulated amount ratio of ashes compared to Comparative Examples 1-3 and 5-11 where $Ra > 100 \mu\text{m}$. In other words, almost all of the ashes in Examples 1-16 are removed or peeled off from the wall portion and moved toward the exhaust gas outlet side, *i.e.*, to the downstream end of a through hole.³ As such, Ogawa et al. clearly fails to teach or suggest “a columnar body comprising porous ceramic and ... having a wall portion interposed between said through holes and configured to filter particulates in exhaust gases, wherein ... said wall portion has a surface roughness Ra as defined by JIS B 0601 which satisfies: $Ra \leq 100 \mu\text{m}$ ” as recited in Claim 7, and the proposed modification based on JP ‘117 and Ogawa et al. do not render the honeycomb filter of Claim 7 obvious.

Higuchi et al. and Kuwamoto et al. are cited simply for a catalyst and an exhaust gas purifying device, respectively, and it is believed that neither Higuchi et al. nor Kuwamoto et al. teaches or suggests “a columnar body comprising porous ceramic and ... having a wall portion interposed between said through holes and configured to filter particulates in exhaust gases, wherein ... said wall portion has a surface roughness Ra as defined by JIS B 0601

³ See Specification, page 52, line 21, to page 55, line 5.

which satisfies: $Ra \leq 100 \mu m$ ” as recited in Claim 7. Therefore, the structure recited in Claim 7 is believed to be distinguishable from Higuchi et al. and Kuwamoto et al.

Because none of JP ‘117, Ogawa et al., Higuchi et al. and Kuwamoto et al. discloses the columnar body as recited in Claim 7, their teachings even combined would not render the structure recited in Claim 7 obvious.

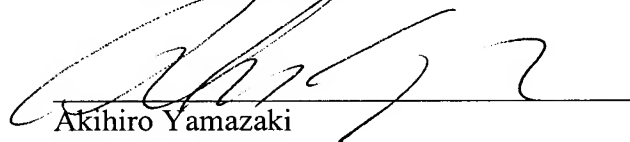
Likewise, Claim 8 is directed to a honeycomb filter for purifying exhaust gases and recites “a columnar body comprising porous ceramic and ... having a wall portion interposed between said through holes and configured to filter particulates in exhaust gases, wherein said plurality of through holes has an area S which is a cross section area perpendicular to said length direction of said columnar body, said columnar body has a length L in said length direction of said columnar body, and said area S and said length L satisfy: $20 \leq L/S \leq 400$, and said wall portion has a surface roughness Ra as defined by JIS B 0601 which satisfies: $Ra \leq 100 \mu m$.” Thus, Claim 8 is believed to be also distinguishable from JP ‘117, Ogawa et al., Higuchi et al. and Kuwamoto et al.

For the foregoing reasons, Claims 7 and 8 are believed to be allowable. Furthermore, since Claims 9-18 depend directly or indirectly from either Claim 7 or 8, substantially the same arguments set forth above also apply to these dependent claims. Hence, Claims 9-18 are believed to be allowable as well.

In view of the amendments and discussions presented above, Applicants respectfully submit that the present application is in condition for allowance, and an early action favorable to that effect is earnestly solicited.

Respectfully submitted,

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